

**SYSTEM AND METHOD FOR MANIPULATING ILLUMINATION CREATED
BY AN ARRAY OF LIGHT EMITTING DEVICES**

ABSTRACT OF THE DISCLOSURE

The present invention provides an illumination optical system that enables the direction and mixing of light from light emitting devices. The optical system comprises a plurality of light emitting devices that are spatially arranged in an array, wherein this array comprises one or more sections, such that the light emitting devices in a particular section emit light within a predetermined wavelength range. Through the use of a combination of macroscopic and microscopic optical systems, the illumination created by the array can be manipulated such that a desired illumination distribution is created. The macroscopic optical system provides a means for redirecting the illumination in one or more desired directions, wherein this redirection is provided by a collection of appropriately shaped and positioned reflective optics. Subsequent to its interaction with the macroscopic optical system, the illumination is manipulated by a microscopic optical system that enables the diffusion of the illumination in a predetermined manner, while retaining the desired angular distribution of the illumination created by the macroscopic optical system. Through the appropriate design and orientation of both the macroscopic and microscopic optical systems, a desired illumination effect can be created.